

CHARACTERISTICS

AND

TRANSPORTATION

ATTITUDES OF

DOWNTOWN

CHICAGO

PEDESTRIANS



Strategic Planning Department

April, 1989

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METROPOLITAN PLANNING DEPARTMENT
220 S. STATE ST. 5TH FLOOR
CHICAGO, IL 60604

CHARACTERISTICS AND TRANSPORTATION ATTITUDES OF
DOWNTOWN CHICAGO PEDESTRIANS

Prepared for the
Chicago Transit Authority

By

Midwest System Sciences
and
Market Opinion Research

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EXECUTIVE SUMMARY
CHARACTERISTICS AND TRANSPORTATION ATTITUDES OF
DOWNTOWN CHICAGO PEDESTRIANS

This report describes a survey of pedestrians in downtown Chicago conducted in the Fall of 1988 to understand the travel market and identify opportunities to increase CTA's market share. Brief intercept interviews were conducted at 48 strategic points in the Loop, River North, and North Michigan Avenue areas. The results of this study describe the characteristics and attitudes of a selection of pedestrians in downtown Chicago on a typical weekday.

Data were collected between 7:00 a.m. and 6:00 p.m. Interviewers were assigned over five time periods and the sample locations to provide qualitatively comprehensive coverage of the study area. The questionnaire focused on characteristics of the current trip.

A total of 1835 interviews were conducted. Three-fourths of those interviewed were employed in the extended downtown, 65% came downtown five days per week, and 59% were making trips beginning and ending downtown. Together, all transit modes carried almost 80% of the travelers intercepted coming into downtown; CTA's share of this market was 47%.

Over three-quarters of the intercepted trips both beginning and ending downtown were made on foot (or by bicycle); CTA buses carried 14% of these internal trips. One fourth of the internal trips were to lunch, and 5% of these were made by CTA; 22% were for shopping or personal business, and CTA carried 16% of these. CTA market shares for intercepted trips ranged from 32% for travel from the area north of the Chicago River to the Loop, to less than 2% for trips wholly within the Loop.

Respondents who did not use CTA for their trips were asked why they did not, and what CTA service improvements might encourage them to ride transit. The dominant reasons for not using CTA were: trips too short; CTA service too slow (including both wait and travel times); and CTA too expensive (mentioned only half as frequently as "too slow"). Over 40% of the respondents said no service improvement would cause them to use CTA. The principal suggestions for improving CTA services were to make them faster and to make them less expensive. Analyses of these responses by mode actually used, trip purpose, and origin-destination pairs, consistently revealed similar results.

On the basis of these results, suggestions for improving CTA downtown distribution services were developed, focusing on reducing travel time and improving overall service quality. Exclusive bus lanes, bus priority lanes, signal priorities, and aggressive parking rule enforcement were proposed. Increasing frequencies on some routes, and making fares simpler if not cheaper were also suggested. Better signing and marking of routes and stops; the use of specially-marked, easily-identified vehicles; and advertising campaigns were offered as ways to increase traveler awareness of existing and emerging downtown distribution services.

The proliferation of private downtown distribution services was offered as an indicator of the potential value of targeting narrowly-defined markets with special, express services. The report suggests that CTA might encourage the development of such services by private institutions.

OBJECTIVES AND APPROACH

At the request of the Chicago Transit Authority (CTA), Market Opinion Research (MOR) and Midwest System Sciences (MSS) surveyed a sample of pedestrians in downtown Chicago in October, 1988. The objectives of this study were to develop an understanding of the current travel market and to identify opportunities to increase CTA's share of that market.

Resources were not available to support the collection of a representative (expandable) sample of all pedestrian travel. Instead, 48 strategic points were selected in the Loop, River North, and North Michigan Avenue areas, and brief, intercept interviews were conducted at these points. Thus, the results of this study describe the characteristics and attitudes of some of the pedestrians in downtown Chicago on a typical weekday.

The sample locations were carefully selected to cover the downtown area, and therefore the results presented in this report provide a useful indication of market characteristics. It is not possible, however, to use these findings to estimate the magnitude of the total market and its various attributes.

SURVEY INSTRUMENT AND SAMPLING PLAN

Our target was pedestrians in the extended downtown area, as defined by the map in Figure 1. Travelers in vehicles were not specifically interviewed, but because the sample locations were widely spread around the study area, we captured many vehicle travelers in the walking phase of their trips.

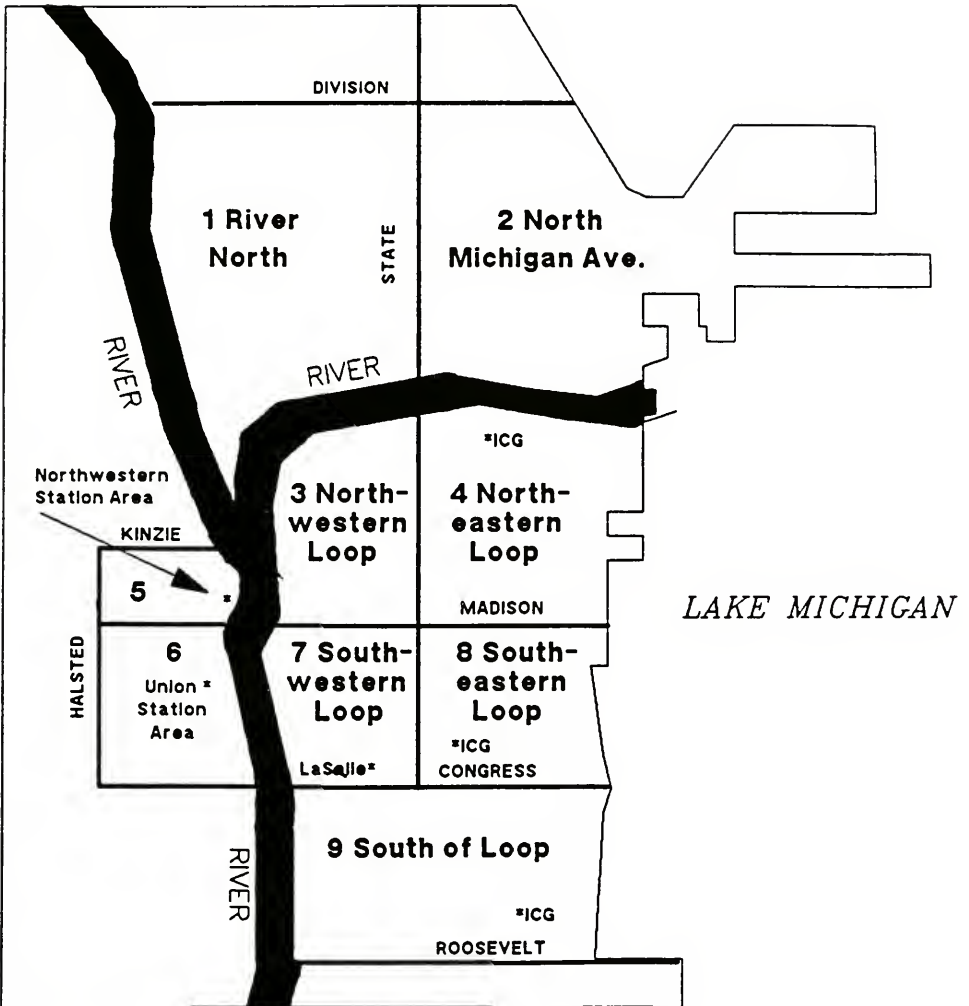
Because this was an on-street intercept study, an extremely brief questionnaire was a necessity. A survey instrument was developed to gather information on origin and destination for the trip the respondent was making when intercepted, including travel to and from (external trips) and within (internal trips) the downtown area. It included questions about mode used, trip purpose, reasons for not using CTA (for persons who did not), and suggestions for improving CTA services in the downtown area. It also captured information on frequency of travel to, and employment within, the downtown. A copy of the survey form is included as Appendix A.

This survey instrument was pretested in the study area, revised, and implemented at all of the sample locations.

Data were collected between 7:00 a.m. and 6:00 p.m. during two weekdays when there was no precipitation. The survey period was divided into five time periods, and interviewer resources were allocated across these periods and over the sample locations to provide qualitatively comprehensive coverage of the study area. Since the questionnaire focused on the current trip, spreading the intercepts over time assured coverage of both internal and external trips and various trip purposes.

Interviewer assignments by time and location were made to provide coverage of pedestrian flows for morning, inbound work trips; midday travel for business, lunch and shopping; and to a lesser extent outbound flows in the afternoon. Each interviewer was assigned a unit of work, usually including either 1.5 or 2.0 hours of intercepts at each of two or three different locations during their work days. An allowance was made for the time needed for interviewers to change locations and for rest periods.

FIGURE 1
STUDY AREA MAP



The sample of places and time periods is shown in Table 1 in the form of the set of interviewer assignments. A total of 108 location/time assignments were completed, covering the 48 sites and 5 time periods. This table shows that some sites were covered for all time periods, but most were surveyed for only one or two periods. This pattern was designed to achieve logical coverage of expected travel patterns.

Interviewers were instructed to locate midblock, and to intercept as many pedestrians as possible. At most locations they were told to intercept people walking in both directions; at a few sites, where we expected strongly directional flows as a result of home/work travel in the peak periods, interviewers were to intercept only those people walking in the peak direction. In all cases, interviewers were instructed to switch sides of the street every 30 minutes.

If interviewers found they could not intercept at least 5 pedestrians per hour, they were told to shift their location in a prescribed, systematic way which would in all cases move them closer to the center of downtown, and to report this relocation at the end of their shift. No such shifts were necessary.

DESCRIPTION OF THE SAMPLED POPULATION

A total of 1835 interviews were conducted; the number of valid responses to each question, of course, is less than or equal to this value. Overall descriptive statistics for the sample are summarized in Table 2; detailed cross tabulations were reported previously.¹

Three quarters of those interviewed were employed in the extended downtown area, and just under half were women. Sixty-five percent of the respondents traveled to the downtown area 5 times per week. Of those respondents who work in the downtown, 81% make the trip five times per week; 94% of those coming to downtown five days per week work there.

Just under three-fourths (72% of those respondents who do not work in downtown come there less than five times per week. Twelve percent of the downtown workers in the sample make the trip more than five days per week, and 7% travel there fewer than five times per week.

Thus, the sample intercepted in this study largely represents downtown workers who come to the area five times per week: they are experienced, repetitive tripmakers.

Information on origins and destinations of travelers was gathered by showing them a simplified map of the area and asking them to identify the starting and ending points of their current trip. Forty-one percent of the sampled travelers were making an external trip, either coming in from outside of the extended downtown or leaving the area. The rest were engaged in journeys wholly within the extended downtown.

¹ "Downtown Distribution Survey," prepared for the Chicago Transit Authority by Market Opinion Research and Midwest System Sciences, December, 1988.

TABLE 1: SAMPLING SCHEME

		TIME	7:00-9:00	MOVE	9:30-11:00	MOVE	11:30-13:30	MOVE	14:00-15:30	MOVE	16:00-18:00
LOCATION BETWEEN.....AND											
WEST RIVER CORDON											
Lake	Chicago River		1								
Randolph	Chicago River		1				1		1		
Washington	Chicago River		1		1						
Madison	Chicago River		1								
Monroe	Chicago River		1		1		1				
Adams	Chicago River		1		1		1				
Jackson	Chicago River		1						1		
VanBuren	Chicago River		1								
SOUTH LOOP CORDON											
Wacker	VanBuren Jackson		1								
Franklin	VanBuren Jackson										
Wells	VanBuren Jackson		1								
Lasalle	VanBuren Jackson		1		1		1		1		
Clark	VanBuren Jackson						1				
Dearborn	VanBuren Jackson		1		1		1		1		
State	VanBuren Jackson						1				
Wabash	VanBuren Jackson		1				1				
Michigan	VanBuren Jackson				1						
NORTH RIVER CORDON											
Franklin	Chicago River		1				1				
Wells	Chicago River				1		1				
Lasalle	Chicago River		1		1		1				
Clark	Chicago River		1		1		1				
Dearborn	Chicago River		1		1		1				
State	Chicago River				1		1				
Wabash	Chicago River				1		1				
Michigan	Chicago River		1		1		1				
EAST LOOP CORDON											
Congress	Michigan Wabash										
VanBuren	Michigan Wabash										
Jackson	Michigan Wabash		1				1				
Adams	Michigan Wabash						1				
Monroe	Michigan Wabash		1		1		1				
Madison	Michigan Wabash						1				1
Washington	Michigan Wabash		1		1		1				
Randolph	Michigan Wabash				1						1
Lake	Michigan Wabash		1				1				
Wacker	Michigan Wabash				1		1				1

TABLE 1: SAMPLING SCHEME

			TIME	7:00-9:00	MOVE	9:30-11:00	MOVE	11:30-13:30	MOVE	14:00-15:30	MOVE	16:00-18:00
LOCATION BETWEEN.....AND												
NORTH MICHIGAN AVENUE												
Michigan	Grand	Ohio				1			1		1	
Michigan	Superior	Chicago				1			1		1	
Michigan	Walton	Oak				1			1		1	
NORTH LOOP SEIVE												
Wells	Division	Elm				1			1			
LaSalle	Division	Elm		1		1			1			1
State	Division	Elm		1		1			1		1	1
Wells	Grand	Ohio							1			1
LaSalle	Erie	Huron							1		1	1
State	Chicago	Pearson							1		1	1
Clark	Chestnut	Locust							1		1	1
Wells	Walton	Oak							1			1
Grand	St Claire	Fairbanks							1		1	1
Chicago	Dewitt	Seneca							1			1

A "1" IN A CELL MEANS THIS PLACE/TIME COMBINATION IS AN INTERCEPT SITE

TABLE 2
OVERALL SAMPLE DESCRIPTION

Total Interviews	1835
Percent Female	46%
Percent Employed in Extended Downtown	75%
Percent Traveling to Downtown 5 days/week	65%
Percent Making External Trips	41%
Trip Purpose	
Work/school	34%
Lunch	14%
Shop/personal business	18%
Business	16%
Other	11%
Return home	6%
Time of Day	
7:00 - 9:00	27%
9:00 - 11:30	22%
11:30 - 13:30	34%
14:00 - 16:00	10%
16:00 - 18:00	8%

The sampling plan covered inbound work and school trips much more thoroughly than outbound trips. Thus, we found that 34% of the trips were for work or school, and only 6% were destined to home. Because an effort was made to cover mid-day internal trips, nearly 60% of the trips intercepted were neither for work or school purposes. About one-third were being made for the purpose of going to lunch or shopping/personal business. Only 16% were for job-related business purposes.

Half the trips were intercepted between 7:00 a.m. and 11:30 a.m.; only 8% were captured in the 4:00 p.m. to 6:00 p.m. period.

MODE USAGE AND TRIP PURPOSE

Mode Usage for Access to Downtown: Table 3 reports the mode of access to the extended downtown for all respondents intercepted on inbound external trips; as stated previously, most of these are inbound, morning work/school trips. The total transit share (METRA and CTA) is just under 80%, with the highest value reported for 5 day per week travelers (primarily people working in the extended downtown). The CTA market share is 47% overall; it is lowest for five day per week travelers and males, and highest for persons visiting the downtown more than five days per week. This may be attributable to the types of jobs held by respondents and/or because of reduced METRA service on Saturday and Sunday. It suggests the importance of maintaining the quality of weekend CTA services to the extended downtown.

The highest market share is for METRA, which carries over 36% of the five day per week travelers. METRA dominates the five day (downtown worker) market, probably because of its monthly pricing policies. Those traveling to downtown less than five days per week (primarily not downtown workers) use CTA slightly more, and auto considerably more. The auto may seem more affordable or necessary for an occasional or special trip. CTA's appeal may derive from the fact that METRA monthly passes are most economical for five or more round trips per week.

Inbound market shares are about the same for males and females, with women slightly more likely to ride CTA bus, and less likely to come by auto.

TABLE 3
ACCESS MODE TO DOWNTOWN
(Percent of All External Trips Only)

MODE	ALL TRIPS	TRIPS/WEEK			GENDER	
		5 Days	<5 Days	>5 Days	Male	Female
CTA Bus	18.9	16.4	22.5	24.7	16.9	20.5
CTA Rail	28.4	27.7	28.3	34.2	28.8	28.1
All CTA	47.3	44.1	50.8	58.9	45.7	48.6
METRA	30.6	36.2	21.7	20.5	31.9	29.1
All Transit	77.9	80.3	72.5	79.4	77.6	77.7
Auto	21.1	18.4	27.5	19.2	21.6	20.5
Walk/Bike	1.0	1.4	—	1.4	0.9	1.0
TOTAL	100.0	100.0	100.0	100.0	100.0	99.2
N	830	517	240	73	445	385

Mode Usage within Downtown: Table 4 shows the mode used for travel within the extended downtown area for *internal* (wholly within downtown) and *external* (one or both ends outside of downtown) trips. All respondents were walking when intercepted, and the internal mode reported is for trips of one block or longer. The internal mode used for external trips is for that portion of the trip which is within the extended downtown.

TABLE 4
MODE USED FOR TRAVEL WITHIN THE EXTENDED DOWNTOWN
(Percent of Trips)

MODE	EXTERNAL TRIPS	INTERNAL TRIPS	ALL TRIPS
CTA Bus	18.1	14.1	16.0
CTA Rail	27.1	4.5	15.6
All CTA	45.2	18.6	31.6
Auto	19.8	5.4	12.4
Walk/Bike	35.1	76.0	56.0
N	830	867	1697

Over three-fourths of the internal trips are made on foot or by bicycle. The dominant vehicular mode reported by respondents for internal trips is CTA bus, with a 14% market share; the total CTA share is 18.6%. Auto serves only 5.4% of the internal trips.

Sixty-five percent of the external tripmakers use some vehicular mode for the within-downtown portion of their trips. This implies that travelers stay on their line haul to get close to their destinations after they enter the extended downtown. METRA is not represented in this table because it does not serve as its own downtown distributor.

The dominant single mode for external trips in this sample is walking (or biking), which reflects the pattern of traveling on foot from the line haul station or stop to the destination. METRA travelers intercepted in this survey showed a strong tendency to walk to their destinations, as further illustrated in Table 5. It is important to note that we did not intercept METRA travelers

TABLE 5
MODE USED DOWNTOWN AS A FUNCTION OF LINE HAUL MODE
(Percent of External Trips Only)

DOWNTOWN ACCESS MODE	MODE USED WITHIN DOWNTOWN					
	CTA Bus	CTA Rail	All CTA	Auto	Walk/Bike	All
CTA Bus	80.1	5.1	85.2	---	14.8	100.0
CTA Rail	5.1	87.7	92.8	---	7.2	100.0
METRA	4.3	4.0	8.3	---	91.7	100.0
Auto	1.1	---	1.1	92.6	6.3	100.0
Walk/Bike	---	---	---	---	100.0	100.0

who use CTA distributor bus routes (e.g., 41, 125, 157) to get to the River North and North Michigan Avenue areas. CTA's own ridership statistics can be used to estimate the scale of that share of the market.

In designing the focus of this survey, we excluded taxi riders because of the difficulty of intercepting them (since they typically are carried door-to-door). Taxis are an important factor in downtown travel, but probably less important than any of the modes reported here.

Trip Purpose and Mode Usage: Trip purposes reported by respondents engaged in internal and external travel are shown in Table 6. Sixty percent of the external trips are destined to work, school, or home, which reflects the sampling design. Fourteen percent of the externals are for personal business or shopping, and 12% are for work-related businesses purposes.

As expected, the internal trips are substantially different in purpose. Less than 23% are for work, school, or home. Nearly 70% are destined to lunch, personal, or work-related business. The dominant purpose is lunch.

TABLE 6
TRIP PURPOSE FOR INTERNAL AND EXTERNAL TRAVEL
(Percent of Internal, External Trips)

PURPOSE	INTERNAL TRIPS	EXTERNAL TRIPS
Work/school	19.2	51.1
Home	3.6	9.0
Lunch	24.3	2.7
Shop/personal	22.2	13.9
Business	20.6	11.7
Other	10.0	11.6
TOTAL	100.0	100.0

Table 7 shows mode of travel by trip purpose for internal trips in the sample. CTA bus carries more than a third of the work trips, and nearly 20%

TABLE 7
MODE OF TRAVEL FOR INTERNAL DOWNTOWN TRIPS BY PURPOSE
(Percent of Each Purpose)

MODE	TRIP PURPOSE					
	WORK	HOME	LUNCH	SHOP & PERS. BUS	BUSINESS	OTHER
CTA Bus	34.1	18.8	3.9	13.0	5.8	14.0
CTA Rail	3.9	21.9	1.0	3.1	4.1	11.6
Auto	5.0	---	2.9	6.2	9.9	3.5
Walk/bike	57.0	59.4	92.2	77.7	80.2	70.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
N	179	32	205	193	172	86

of the homebound trips. These (presumably) serve people who reside in the extended downtown area; indeed, one of the advantages of living in that area is that all of the downtown work places are readily accessible by bus, and many are within walking distance. Internal lunch trips are predominantly made on foot. The CTA bus share of shopping and personal business trips is 13%. When we contrast this with the bus share for lunch trips, the implication is that lunch trips are probably shorter, because of the variety of eating establishments within an easy walk of most downtown locations. Shopping and personal business trips are longer because travelers are presumably more selective in choosing their destinations. The bus has an advantage as trip length increases, particularly during the mid-day period.

Auto (and probably taxi) become more important for internal business trips, for which time pressures may be great and costs can be passed on to the employer.

The downtown mode by purpose for external trips is shown in Table 8. Because these are, by definition, longer trips than the internals, the transit share increases considerably, at the expense of walk/bike. The total CTA share of the shopping trips intercepted in this survey is 51.7%. Even for work related business the CTA share is over 42%.

TABLE 8
MODE OF TRAVEL FOR EXTERNAL DOWNTOWN TRIPS BY PURPOSE
(Percent of Each Purpose)

MODE	TRIP PURPOSE					
	WORK	HOME	LUNCH	SHOP & PERS. BUS.	BUSINESS	OTHER
CTA Bus	12.4	28.4	14.3	29.7	18.6	21.2
CTA Rail	25.4	33.8	19.0	22.0	23.7	40.4
All CTA	37.8	62.2	33.3	51.7	42.3	61.6
Auto	15.7	21.6	28.6	24.6	28.9	19.2
Walk/bike	46.6	16.2	38.1	23.7	28.9	19.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
N	421	74	21	118	97	86

Origin-Destination Patterns: The origin-destination trip patterns observed in this survey are not illustrative of the market, because we did not collect a probability sample which can be expanded to show the true scale of O-D flows. It is instructive to examine some of the characteristics of the sample by O-D pair. For this purpose, we aggregated trips in the seven downtown zones used in the survey to three larger areas, because there were very few trips in some of the O-D pairs at the more disaggregate level. The larger zones were designated *North* including both zones north of the Chicago River; *Central*, including all four zones in the Loop, and *West*, the zones west of the Chicago River.

Trip purpose by aggregate O-D pair is shown in Table 9 for internal trips only. Trips intercepted between the west and central zones are principally for work and lunch purposes: lunch opportunities seem to be greater in the central zone than in the west. The main purposes for intercepted trips from the central

to the north zone are work-related business, shopping, and lunch. Trips in the opposite direction mainly involve returning to work and work-related business. Within zone trips in both the north and central zones are principally for shopping and lunch purposes.

TABLE 9
TRIP PURPOSE BY AGGREGATE O-D PAIR
(Internal Trips only)

PURPOSE	WEST to CENTRAL	CENTRAL to WEST	CENTRAL to NORTH	NORTH to CENTRAL	NORTH to NORTH	CENTRAL to CENTRAL
WORK	23.1	25.9	8.3	37.4	14.2	13.2
HOME	1.9	---	6.8	4.3	4.4	1.1
LUNCH	28.8	25.9	19.7	17.1	22.2	35.7
SHOP	21.1	22.2	25.8	13.4	29.8	20.9
BUSINESS	19.2	18.5	26.5	20.9	16.0	22.5
OTHER	3.0	7.4	12.9	7.0	13.3	6.6
O-D TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
% ALL TRIPS	6.5	3.4	16.4	23.2	28.0	22.6
N	52	27	132	187	225	182

Table 10 presents the same information for external trips. It shows that the dominant west to central flow is for work purposes, which is a direct result of our sampling scheme. Flows from the central to the west zone are for a wide mixture of purposes (though the sample size is quite small). Intercepted trips between the central and north zones are mainly to work, show, and work-related business activities. External trips in the central zone are primarily for work, that is, they represent people coming into this zone on a line haul mode and going to work there. External trips within the north zone are accessing shopping opportunities or returning home (again, a function of the sampling scheme).

TABLE 10
TRIP PURPOSE BY AGGREGATE O-D PAIR
(External Trips only)

PURPOSE	WEST to CENTRAL	CENTRAL to WEST	CENTRAL to NORTH	NORTH to CENTRAL	NORTH to NORTH	CENTRAL to CENTRAL
WORK	80.4	18.5	33.3	40.5	14.0	55.7
HOME	0.6	18.5	5.9	13.9	22.6	8.1
LUNCH	3.9	---	3.9	3.8	2.2	2.0
SHOP	5.0	11.1	25.5	13.9	26.9	12.8
BUSINESS	6.1	18.5	17.6	17.7	16.1	9.8
OTHER	3.9	33.3	13.7	10.1	18.3	11.5
O-D TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
% ALL TRIPS	24.7	3.7	7.0	10.9	12.8	40.8
N	179	27	51	79	93	296

Market shares by mode for aggregate O-D zone flows are shown in Table 11. It is important to keep in mind that the sample is not representative of the full

market, so information in this table is necessarily incomplete, particularly for transit flows between the west and north zones. A significant transit share (32%) was observed for flows from the north to the central zone; that the central-to-north transit share is only 12% reflects sampling bias. Generally trips between the central or west and the north zones are long, and even though transit speeds are slow, CTA buses capture a significant market share. Non-rider evaluations of CTA services discussed in the next section of this report underscore the potential for increasing CTA market penetration with faster service.

TABLE 11
MODE SHARE BY AGGREGATE O-D PAIR
(Percent of Internal Trips only)

PURPOSE	WEST to CENTRAL	CENTRAL to WEST	CENTRAL to NORTH	NORTH to CENTRAL	NORTH to NORTH	CENTRAL to CENTRAL
CTA Bus	15.4	--	12.1	31.6	9.3	1.1
CTA Rail	1.9	--	7.6	6.4	5.3	0.5
All CTA	17.3	--	19.7	38.0	14.6	1.6
Auto	1.9	--	5.3	2.7	8.9	5.5
Walk/bike	80.8	100.0	75.0	59.4	76.4	92.9
O-D TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
N	52	27	132	187	225	182

EVALUATION OF CTA SERVICES

Intercepted travelers who were not using CTA bus or rail services on their trips were asked why they did not, and they were invited to suggest changes in CTA services which might cause them to take the CTA on trips of the type they were making. Respondents were not presented with response categories for these questions; they were invited to respond as they wished, but a variety of possible answers were precoded on the interview sheets. The initial categories used for analysis, including those precoded and others offered by respondents, are shown below, with a short-hand code shown at the right to simplify presentation:

Why didn't you use CTA for this trip?

Too short a distance	SHORT TRIP
Prefer to walk/exercise	EXERCISE
Costs too much	COST
Too long to wait	WAIT
Too slow/too many stops	SLOW
Car/taxi faster	CAR
No CTA connections/no service	NO SERVICE
Didn't know routes or schedules/need map	DON'T KNOW
Crime/not safe from crime	CRIME
Too crowded/can't get a seat	CROWDED
Hassle/other negative about CTA	HASSLE
Too stuffy/hot/cold	COMFORT
Vehicles unsafe	UNSAFE
Got ride	RIDE
Other	OTHER

Are there any changes CTA could make in its service to get you to use CTA for trips like the one you are making now?

None/want to walk/drive	NONE
Faster service	FASTER
Lower fare	CHEAPER
More frequent service/better schedules	FREQUENT
If safe from crime	CRIME
Free transfers	TRANSFERS
Maps/better route maps	INFO
If more comfortable	COMFORT
More reliable/on time	RELIABLE
Cleaner buses	CLEANER
Shuttle service	SHUTTLE
Change routes	ROUTES
If could get seat	SEAT
Other	OTHER

Table 12, taken from the MOR/MSS data tabulations², shows the pattern of responses explaining why travelers did not use CTA services. Respondents often indicated more than one factor, so percentages add to more than 100%.

TABLE 12
REPORTED REASONS FOR NOT USING CTA
(Percent of Respondents)

REASON	TOTAL	WALKERS	AUTO USERS	WORK DOWNTOWN?	
				YES	NO
SHORT TRIP	48	54	22	52	34
EXERCISE	24	27	11	23	27
COST	11	12	7	12	10
WAIT	11	11	11	12	8
SLOW	8	9	7	9	5
CAR	7	1	35	6	11
NO SERVICE	6	5	9	6	5
DON'T KNOW	4	4	3	3	7
CRIME	4	2	11	4	5
CROWDED	4	3	4	4	4
HASSLE	2	2	4	2	3
COMFORT	1	1	1	2	1
UNSAFE	1	—	2	1	--
RIDE	--	—	2	--	--
OTHER	10	6	26	9	13
N	1221	992	227	940	280

Short trip length and expressed desire to walk for exercise are the dominant reasons for not using CTA reported by respondents. We speculate that these answers are interconnected, and that exercise may be as much a rationalization

²MOR/MSS, *op. cit.*

as a reason. Auto travelers report "car faster" as their primary reason for not using CTA. This could be related to the type of trip and traveler characteristics. Persons who do not work downtown offer explanations similar to auto users; these groups have overlapping membership.

About 10% of respondents in all categories cite the cost of CTA as a deterrent to use; perceptions that wait times are excessive are reported about as often as price, and auto users react more often to wait time than to price. Crime is mentioned infrequently, although auto users cite it more often than other respondents. Again, this may be a rationalization for auto use. All of the other factors listed are indicated less frequently.

Table 13 shows the changes in CTA service recommended by respondents to increase their use of transit for downtown trips. Again, multiple responses were permitted.

The most frequent response is that no change in CTA service will cause respondents to use it for trips of the type on which they were intercepted. This might simply indicate that the trips generating such responses were indeed quite short. There was an interest in faster service; when grouped with the suggestions for more frequent and reliable service, this combination of recommendations indicates that the market might respond favorably to a package of service quality enhancements. Cheaper service and free transfers were also requested. As before, crime reductions are preferred more by auto users than others. Other ideas were mentioned less frequently.

TABLE 13
SUGGESTIONS FOR IMPROVING CTA SERVICE
(Percent of Respondents)

REASON	TOTAL	WALKERS	AUTO USERS	WORK DOWNTOWN?	
				YES	NO
NONE	43	44	40	44	41
FASTER	13	12	17	14	11
CHEAPER	11	12	8	13	8
FREQUENT	11	11	11	11	9
CRIME	10	8	20	10	13
TRANSFERS	5	6	3	6	5
INFO	4	4	3	4	4
COMFORT	3	3	6	3	4
RELIABLE	3	3	1	4	1
CLEANER	3	2	5	3	1
SHUTTLE	3	3	1	3	2
ROUTES	2	2	3	3	2
SEAT	2	2	3	2	1
OTHER	16	15	17	15	16
N	1221	992	227	940	280

The pattern of reasons and suggestions shown in Tables 12 and 13 led us to aggregate some of the categories prior to further analysis. In particular, we felt that some of the response categories were quite similar in meaning, and some

responses were given so infrequently as to be of little value in the development of marketing recommendations.

Reasons for not using CTA service were compressed to the following short list:

- Short distance or exercise SHORT TRIP
- Too expensive EXPENSIVE
- Long wait or too slow or car/taxi faster SLOW
- Crime CRIME
- Other (including all other response categories) OTHER

Suggestions for improving CTA service were compressed to:

- None NONE
- Faster or more frequent FASTER
- Lower fare or free transfers CHEAPER
- Safer (from crime) SAFER
- More comfortable COMFORT
- Other (including all other response categories) OTHER

Analyses of these aggregated responses from several different perspectives are presented below.

Table 14 shows reasons for not using CTA for internal and external trips. Eighty percent of those responding about internal travel felt that their trips were too short to use CTA or they preferred to walk; just over 60% of those making external trips gave these responses. This suggests a limit on the size of the potential market for CTA downtown distribution services. On the other hand, better downtown circulation services might lead to a change in travel patterns in response to improved CTA service.

TABLE 14
REASONS FOR NOT USING CTA SERVICE
(Percent of Respondents - Internal and External Trips)

REASON	INTERNAL TRIPS	EXTERNAL TRIPS
SHORT TRIP	79.5	61.5
EXPENSIVE	10.8	12.8
SLOW	23.9	29.4
CRIME	2.4	6.5
OTHER	25.3	35.9

Just over 10% said CTA was too expensive, confirming the evidence from other transit market research studies that price is not a primary factor in mode choice. This is not surprising because the market is principally made up of persons employed in the extended downtown.

About 25% of the respondents making internal trips, and nearly 30% of those on external trips, said that CTA was too slow to meet their travel needs when compared with alternatives modes -- mainly walking. This corresponds to our knowledge that CTA bus speeds in the extended downtown are quite slow. Crime

is only a minor factor reported to influence use of CTA in this market. There is no major difference between responses for internal and external trips.

Table 15 shows suggestions for improving CTA services for internal and external trips. These results correspond relatively well to the reasons people offered about why they did not use CTA. About 40% and 47% of the respondents on internal and external trips, respectively, said there were no CTA service improvements which would get them to use the service; this suggests that perhaps 53-60% of those intercepted might consider using CTA for their within-downtown trips if service were better.

TABLE 15
SUGGESTIONS FOR IMPROVING CTA SERVICE
(Percent of Respondents - Internal and External Trips)

REASON	INTERNAL TRIPS	EXTERNAL TRIPS
NONE	40.5	46.6
FASTER	32.9	25.3
CHEAPER	16.4	19.4
SAFER	9.0	12.7
COMFORT	6.7	8.3
OTHER	30.6	23.8

The most frequently offered suggestion was to make service faster, including more frequent service and shorter travel times; this was a more common response for internal trip makers than for those engaged in external travel. Between 16% and 20% asked for lower fares or free transfers. The next most frequent response called for making CTA safer from crime, a greater concern on external trips, followed by improvements in comfort.

Table 16 breaks down reasons for not using CTA by the mode actually used for internal trips within downtown, auto and walk (or bike). Here there is a clear difference between modes: only 30% of those who used auto said they did so because the trip was too short to use CTA, while almost 81% of those who walked offered this explanation. The price of CTA was reported as a discouragement to its use by only 6% of auto users, but by 12% of walkers. Apparently auto travelers are substantially less sensitive to price, though price is not a primary factor for either group.

TABLE 16
REASONS FOR NOT USING CTA SERVICE BY MODE USED
(Percent of Respondents - Internal Trips Only)

REASON	AUTO	WALK/BIKE
SHORT TRIP	29.8	80.7
EXPENSIVE	6.2	12.3
SLOW	54.7	20.6
CRIME	11.8	2.5
OTHER	57.1	24.1

That CTA is too slow (or an alternative mode is faster) was the reported reason that 55% of auto travelers avoided transit. Only 21% of the walkers gave this explanation. This suggests that auto users are quite willing to spend money to save time for their within-downtown trips. The threat of crime was a minor factor among the explanations, although it was reported to be nearly five times as important for auto users than walkers.

Table 17 implies that auto users are more likely to be attracted to CTA by service improvements than walkers: 38% of those traveling by car said no service improvements would cause them to switch to CTA, while 43% of the walkers took this position. Just under a third of both groups called for faster CTA service in the downtown. Ten percent of the auto users, and nearly 19% of the walkers suggested cheaper transit service. This supports the notion that walkers are more price sensitive than auto users.

TABLE 17
SUGGESTIONS FOR IMPROVING CTA SERVICE BY MODE USED
(Percent of Respondents - Internal Trips Only)

REASON	AUTO	WALK/BIKE
NONE	37.9	43.1
FASTER	32.3	30.1
CHEAPER	10.6	18.7
SAFER	13.0	8.2
COMFORT	13.0	6.6
OTHER	31.1	28.5

As in Table 16, increasing safety from crime was a less important factor for both types of travelers, but it was more often cited by auto users than walkers. The same pattern was observed for increased comfort, which was called for twice as frequently by auto users than by walkers.

Together, the information in Tables 16 and 17 indicate that auto users will be considerably harder to attract to CTA for their internal trips in the extended downtown. However, there were only 47 respondents in this category in the intercepted sample. The 659 walkers intercepted on internal trips seem somewhat more tractable if CTA can offer faster, perhaps cheaper downtown distribution services.

Table 18 shows reasons for not using CTA for internal downtown travel by trip purpose. That the trip was too short is most commonly reported for lunch trips (91%) and shopping trips (87%). This was a factor of somewhat less importance for work and business trips. This should not serve to discourage CTA service improvements for lunch and shopping travel in the long run, however. It is reasonable to speculate that some of these trips are short because transit now offers unsatisfactory service. Perhaps if service was improved substantially, travelers might make longer trips, thus reducing the relevance of this factor.

The price of travel by CTA was offered as somewhat more important for shopping trips than for other types. Long transit travel times was the most important single discouragement to CTA use for all trip purposes. It was particularly important for the trips connected to economic activities, i.e.,

work-related business, work, and shopping. Fear of crime was not a major factor for any trip purpose.

TABLE 18
REASONS FOR NOT USING CTA SERVICE BY PURPOSE
(Percent of Respondents - Internal Trips Only)

REASON	WORK	LUNCH	SHOP	BUSINESS
SHORT TRIP	74.7	90.6	87.0	59.3
EXPENSIVE	9.5	9.3	12.3	10.0
SLOW	26.3	19.3	24.7	31.1
CRIME	4.2	2.1	1.3	2.7
OTHER	31.6	20.3	13.0	40.0

Suggestions for improving CTA services by trip purpose are shown in Table 19. Lunch trip travelers were most likely to say that no improvements would attract them. Work and work-related business travelers appear more likely to be attracted to CTA with better service. Overall, only 35% of the respondents said that no service improvement would get them on the CTA.

As before, faster service was the most frequently suggested improvement, followed by cheaper service. Increasing safety from crime was a more commonly offered suggestion than improved comfort, except for lunch trip travelers.

TABLE 19
SUGGESTIONS FOR IMPROVING CTA SERVICE BY PURPOSE
(Percent of Respondents - Internal Trips Only)

REASON	WORK	LUNCH	SHOP	BUSINESS
NONE	36.8	52.1	39.6	35.3
FASTER	35.8	21.4	36.4	38.7
CHEAPER	20.0	16.1	15.6	14.7
SAFER	15.8	4.7	11.0	8.0
COMFORT	7.4	7.3	5.8	5.3
OTHER	29.5	31.3	24.0	32.0

Finally, Tables 20 and 21 show the reasons for not using CTA and suggestions to improve its services by aggregate O-D flows in the extended downtown area. Respondents perceive trips from the west to the central zones as too short to warrant transit use; this is supported by the fact that they do not complain as much as other travelers about slow service. The same general pattern of responses was observed for travelers making trips within the north and central zones.

The strongest objections to slow service came from those intercepted on trips between the north and central zones. Crime does not seem to be a major deterrent to transit use for any of these zone pairs.

Table 21 shows that over half of the travelers intercepted on trips between the west and central zones reported that no improvements in CTA service would encourage them to use transit. On the other hand, only 30% of those intercepted

trips between the north and central zones, and 40% of those traveling within the north zone, stated that no CTA change would cause them to use the service.

TABLE 20
REASONS FOR NOT USING CTA SERVICE BY O-D PAIR
(Percent of Respondents - Internal Trips Only)

REASON	WEST > CENTRAL	CENTRAL > WEST	CENTRAL > NORTH	NORTH > CENTRAL	NORTH > NORTH	CENTRAL > CENTRAL
SHORT TRIP	100.0	74.1	61.5	57.1	93.2	86.0
EXPENSIVE	11.4	7.4	11.5	14.3	7.9	12.3
SLOW	15.9	14.8	28.8	39.3	20.0	20.1
CRIME	---	---	1.0	6.3	2.1	2.2
OTHER	15.9	18.5	37.5	33.9	18.9	21.8

Nearly half of those intercepted on trips between the north and central zones suggest the need for faster CTA service. Improved safety from crime is unimportant, except for those with trips ends in the north zone; perhaps the broader mix of land uses and wider variations in daytime population densities makes this area feel less safe.

TABLE 21
SUGGESTIONS FOR IMPROVING CTA SERVICE BY O-D PAIR
(Percent of Respondents - Internal Trips Only)

REASON	WEST > CENTRAL	CENTRAL > WEST	CENTRAL > NORTH	NORTH > CENTRAL	NORTH > NORTH	CENTRAL > CENTRAL
NONE	54.5	51.9	36.5	30.4	39.5	47.5
FASTER	25.0	33.3	46.2	48.2	28.4	23.5
CHEAPER	11.4	3.7	14.4	25.0	11.6	21.2
SAFER	4.5	3.7	5.8	10.7	13.2	7.3
COMFORT	4.5	3.7	5.8	7.1	7.4	7.8
OTHER	20.5	22.2	32.7	31.3	32.6	27.9

Recognizing the limitations of this sample, there are some relatively clear patterns in these responses. Many trips are viewed as too short to make transit use worthwhile, at least in the context of the present service quality. The primary concern is for faster service, particularly for longer trips. Price is a less important factor for most respondents. Crime and lack of comfort are mentioned occasionally, but they do not seem to be major impediments to CTA use.

It is important to recognize that a substantial portion of the market already using CTA for trips within the extended downtown was not intercepted in this study. In particular, very few of the persons using CTA distribution routes from the west side METRA stations were surveyed. Furthermore, in the process of conducting this study, we observed that many institutions, businesses, and buildings operate their own, private distribution services in the extended downtown, connecting with both METRA and CTA rail lines. Persons using these services were not intercepted. This trend toward privatization is, in itself, a measure of the perceptions of quality of CTA services, the routes of which private services typically duplicate.

MARKETING SUGGESTIONS

The results of this survey can be used to formulate a variety of market development suggestions for CTA in the extended downtown area. These include service improvements, information programs, and continued market research. These suggestions are outlined below.

Service Improvements: During this period of renewed interest in the vitality and growth of Chicago's extended downtown, it will be important for CTA to continue to place high priority on preserving the market share of its current downtown distribution services. Special attention should be paid to the connections between METRA stations and the fastest growing parts of downtown, e.g., River North and north Michigan Avenue, now served by routes 41 and 125, among others.

This can be accomplished by monitoring and maintaining objective measures of service quality, such as travel times, headways, and crowding. This is a market that responds to quality service, and it is important to pay attention to service quality factors. Riders engaged in work trip travel prefer convenience and efficiency over low price, and comfort is important. Increasing frequency to meet demand may be necessary in some cases. It would be desirable to conduct on-board market surveys of current CTA riders to develop a better understanding of their service perceptions and preferences.

Survey results suggest the importance of an aggressive program to provide faster downtown distribution services, which should include both headway and travel time reductions. The time may be right to reconsider contraflow bus lanes in the downtown, with appropriate concern for pedestrian safety. Contraflow lanes were abandoned some years ago because of the accident experience. We do not suggest that the CTA and the City of Chicago should accept a higher accident rate to improve bus service. Yet other cities seem to be able to operate contraflow lanes safely and efficiently. This should be possible in Chicago, as well.

Other forms of bus priorities should also be considered, including improved signal timing, bus priority signals, and exclusive bus lanes. The latter options give buses an advantage over automobiles, which seems important. Stricter real-time traffic controls to preclude the blocking of intersections are worth considering. New York City seems to have had some success with such efforts, and it would be worthwhile to explore that experience.

Parking restrictions and an aggressive enforcement program could also contribute to faster bus flows. The recent shift of parking enforcement responsibilities from the courts to the City administration offers real promise for achievement in this area. City officials seem anxious to cooperate, and the CTA should take advantage of this situation by moving aggressively to recapture the downtown streets- including those north of the Chicago River, for transit.

There may be opportunities to increase service frequencies on crowded and/or growing CTA routes in the downtown, and these should be pursued.

While pricing is not the most important concern for those intercepted in this survey, CTA must not ignore it. We think the money price may be less important than the inconvenience of having to pay exact fares. Simpler fares,

e.g., 25¢, downtown circulation tokens, and simpler joint pricing of line haul and distribution services, may respond to this issue.

CTA's downtown distribution market penetration might also be increased by the use of readily identifiable vehicles and routes. The real value of special vehicles may lie in their advertising impact: a uniquely marked distribution vehicle tells nonriders that a service exists and may meet their needs. Similarly, the distributor routes should be marked with high quality maps on signs, so that the many people who walk to their destinations can be informed by direct example that transit is there to serve them.

There are indications that specialized distributor services, running closed-door from origin to destination, may be particularly appealing in this market. The fact that so many institutions operate their own services from downtown line haul stations offers a strong indication that there is a solid market for such specialized services. Operators include Michael Reese Hospital, the University of Chicago, the University of Illinois, Montgomery Wards, and several major near-downtown residential complexes.

Private services offer direct connections which can operate faster because they do not make intermediate stops. There is no uncertainty about boarding the right bus or alighting at the right stop. Passengers may feel safer from crime because they have a business connection to others on the vehicle. Because services are often provided with school buses, they may be less comfortable than CTA, and most are subsidized but not free. Thus riders are willing to trade some comfort for other service advantages.

CTA's options in the face of such services are several. It may elect to compete more aggressively for this market, and thus to attempt to drive out private services. This seems unwise in light of the desirability of privatization and its resultant public cost advantages. CTA might work more directly to support and encourage such services, e.g., through assistance in planning, management, and operator training. Finally, and perhaps most important, CTA might learn something from the apparent success of private services, using these models to structure additional downtown distribution services of its own.

The experimental services connecting near-downtown METRA stations to north Michigan Avenue may offer a case in point. The private service model suggests the merits of running specially-marked buses closed-door from station to workplace to improve travel times and ensure a more comfortable riding environment. We expect that a first quality service will attract riders even if the price is not low.

Information Programs: It will be important for CTA to inform the downtown market about current and future services. Information programs should be developed in several dimensions. A priority action should be to mark routes and vehicles so walkers can know their availability. Signs with maps, kiosks with maps and schedules, easily identified shelters, and perhaps even colored pavement markings are all worth considering. Specialized, easily read downtown distribution system maps which identify specific businesses may be helpful and might be supported with advertising revenues.

Media campaigns need to be carefully targeted to ensure their efficiency. Signs and flyers on METRA and CTA trains could be valuable, and well-focused distribution of brochures in work places and table cards in restaurants (which

might be willing to buy and give out downtown distributor tokens) may find the right recipients. The use of personified advertisements ("They CTA works for me") was pioneered by METRA and has been picked up by CTA. The meaning behind this message is that "successful people like you" do ride the CTA. This is a positive direction for advertising, but it is important to vary the individuals and types of people illustrated to give the impression that many people already ride CTA downtown services.

Market Research: The need for market research does not end with this study. Many questions remain to be answered, and service innovations need to be routinely and carefully evaluated. We have already suggested the need to survey riders of current CTA downtown distribution services. To this we add surveys of people using private distribution services. Both of these kinds of surveys should be conducted on the vehicles, and should include ratings of service attributes to develop a clearer understanding of what is important to riders. Ideally, such surveys might first be conducted in corridors where both CTA and private services are operating to capture perceptions of relative service quality.

As service innovations and information programs are implemented, resources should be devoted to field evaluations, including surveys of riders and nonriders in the market. Emphasis should be on awareness of CTA actions, perceptions of attributes, and the demographic and travel characteristics of respondents, so that the reasons for travel choices can be deduced and used as a firm basis for future service planning.

CLOSURE

There are important and exciting challenges for CTA in the downtown distribution market. We think the potential for ridership gains is strong, but they can only be attained through substantial service quality improvements. In this process, CTA managers and policy makers will be making choices that affect the future economic and social viability of downtown Chicago. Setting the balance between concerns for operational efficiency and sensitivity to the service quality demands of the market will be difficult but critical to the success of these efforts.

APPENDIX A
DOWNTOWN INTERCEPT QUESTIONNAIRE

CTA DOWNTOWN DISTRIBUTION STUDY

Hello, I'm doing a survey for the Chicago Transit Authority, CTA, about trips people in the downtown area are making today.

Q1. I want to know where you are coming from now. Did you start inside the red border on this map of downtown Chicago? (SHOW MAP)

N Yes -- show me on the map (CIRCLE ZONE NUMBER FROM MAP)

1 2 3 4 5 6 7 8 9
(GO TO Q4)

0 No (GO TO Q2)

(IF DID NOT START INSIDE RED BOUNDARY, ASK Q2-Q3)

Q2. How did you get into the downtown area on this map today -- by car, bus, EL, train or what?

- 1 Car/van/truck
- 2 CTA bus
- 3 CTA EL/subway/train
- 4 METRA train (Chicago Northwestern, Burlington Northern, Milwaukee Road, ICG, Norfolk & Western, Rock Island)
- 5 Live in downtown area on map
- 6 Walk/bike
- 7 Other

Q3. Where on this map did you enter the red boundary or get off (CAR/BUS/EL/TRAIN)? (CIRCLE ZONE NUMBER FROM MAP)

1 2 3 4 5 6 7 8 9

(ASK ALL)

Q4. On the map, I want to know where you are going now -- where will this trip end? (CIRCLE ZONE NUMBER FROM MAP)

1 2 3 4 5 6 7 8 9 10 (OUTSIDE RED BOUNDARY, GO TO Q5)

GO TO Q7

Q5. Show me on the map where you will leave the downtown area. (CIRCLE ZONE NUMBER FROM MAP)

1 2 3 4 5 6 7 8 9

Q6. How will you travel on the part of this trip outside the red boundary area?

- 1 Car/van/truck
- 2 CTA bus
- 3 CTA EL/subway/train
- 4 METRA train (Chicago Northwestern, Burlington Northern, Milwaukee Road, ICG, Norfolk & Western, Rock Island)
- 5 Walk/bike
- 6 Other

(ASK ALL)

Q7. What is the MAIN purpose of this trip? (ONE MENTION ONLY)

- 1 Go to work
- 2 Start home from work
- 3 Lunch
- 4 Shopping/personal errands
- 5 Business/job errands
- 6 Other

(ASK ALL)

- Q8. What are all the means of transportation, including walking, you are using for any distance over one block on this trip inside the red boundary area on the map?
(RECORD CODES - MULTIPLE MENTIONS ALLOWED)

Q8M1 1 Walk/bike
Q8M2 2 CTA bus (GO TO Q11)
Q8M3 3 CTA EL/subway (GO TO Q11)
Q8M4 4 Car/van/truck

- Q9M1 Q9. Why didn't you use CTA for this trip? (ASK AS OPEN END. CODE
Q9M2 WHAT RESPONDENT SAYS) (MULTIPLE MENTIONS ALLOWED)
Q9M3
Q9M4
Q9M5

01 Too long to wait
02 Too slow/too many steps
03 Too short a distance
04 Prefer to walk/exercise
05 Car/taxi faster
06 Didn't know routes or schedules/need map
07 No CTA route connects/no service
08 Costs too much
09 Too crowded/can't get seat
10 Too stuffy/hot/cold
11 Crime/not safe from crime
12 Vehicles unsafe
13 Got ride
14 Hassle/other negative about CTA

96 Other (SPECIFY) _____

98 Don't know
99 Refused/NA

Q10M1
Q10M2
Q10M3
Q10M4
Q10M5

- Q10. What changes in CTA service might cause you to use CTA for trips like the one you are making now? (ASK AS OPEN END. DO NOT READ ANSWERS. CODE WHAT RESPONDENT SAYS. MULTIPLE MENTIONS ALLOWED)

01 None/want to walk/drive
02 Faster service
03 Shuttle service
04 More frequent service/better schedules
05 Maps/better route maps
06 Lower fare
07 Free transfers
08 Change routes
09 If could get seat
10 If more comfortable
11 If safe from crime
12 More reliable/on time
13 Cleaner buses

96 Other (SPECIFY) _____

98 Don't know
99 Refused/NA

(ASK ALL)

- Q11. Thinking about yesterday, how many trips did you make from one place to another within the red boundary on this map?

(RECORD NUMBER) _____

- Q12. How many days do you come to the downtown area within the red boundary in a typical week?

(CIRCLE NUMBER) 0 1 2 3 4 5 6 7

- Q13. Are you employed within the red boundary?

1 Yes
2 No

- Q14. (BY OBSERVATION) Sex:

1 Male
2 Female

- Q15. (CIRCLE TIME PERIOD OF INTERVIEW):

7-9 a.m. 2-4 p.m.
9-11:30 a.m. 4-6 p.m.
11:30 a.m.-1:30 p.m.

